

Work Order ID 59366

Wednesday, June 02, 2010 1:18:14 PM



Page 1

Item ID: D350-636-011

Accept



Setup

Start



Revision ID:

Item Name: Skidtube LH

Stop



Start Date: 6/2/2010 Start Qty: 1.00



Cust Item ID:

Required Date: 6/9/2010 Req'd Qty: 1.00



Customer:

Reference:

Approvals:

Process Plan:

pl

Date: *10-6-02*

Tooling:

Date:

QC:

Date:

SPC (Y/N):

Date:

Run

Start



Stop



Sequence ID/
Work Center ID

Operation
Description

Set Up/
Run Hours

Tool ID

Tool #

Plan
Code

Accept
Qty

Reject
Qty

Reject
Number

Insp.
Stamp

Draw Nbr

Revision Nbr

D2750

Rev F

100

0.00



DOCUMENT CONTROL

DC

0.00

Memo

Document Control

Photocopy blue file and type labels per PPP D350-636-011 CHG 005

8/10/07/12

W/O:		WORK ORDER CHANGES						
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector	

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
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Run

Start



Stop



Sequence ID/
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Operation
Description

Set Up/
Run Hours

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Tool #

Plan
Code

Accept
Qty

Reject
Qty

Reject
Number

Insp.
Stamp

110



Skidtubes

Skidtubes

Skidtubes

0.00

0.00

Memo

1- Mark cut line on aft end of D2600-3-Bent using Jig DT 8150. Cut to length as per Dwg D2750. Deburr end

2-Drill pilot holes as per Dwg D2750 sheet 4 (D2750-1 details).Drill using drill Jig DT8150 & DT8863.

3- Mark fwd end for cutting using Drill Jig DT 8150 & DT8863 and cut as per dwg D2750.Deburr.

4- Drill fwd step holes using DT9616. Ensure proper positioning.

5- drill pilot holes for blade fitting bolt holes using DT8983. Open to 0.500"

6- locate DT8330 off of blade fitting bolt holes and drill pilot holes for blade fitting

7-Open up holes for Detail B to 0.375" (4 holes per side)and blade fitting location holes to 0.500" (total of 4 holes per side) as per dwg D2750 .Open up holes for ground handling and detail C to 0.500" (8 holes per side)

8-Drill pilot holes for wearplates as per Dwg D2750 using DT8108 open to 0.297".

9-Open up holes of Detail A to 0.297" (total of 2 holes per side)

10-Weld D2744 Cap as per Dwg D2750 and QSI 004.Fill grooves in bend left from bending as per QSI 004

A/R Aluminum Rod

☐ M114242

BE 10/06/14

BE 10/06/11

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Customer:

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QC: _____ Date: _____ SPC (Y/N): _____ Date: _____

Run

Start

Stop

Sequence ID/
Work Center IDOperation
DescriptionSet Up/
Run Hours

Tool ID

Tool #

Plan
CodeAccept
QtyReject
QtyReject
NumberInsp.
Stamp

11-Grind welds flush as per Dwg D2750

BE 10/06/14

12- Scribe batch# inside per dwg D2750

BE 10/06/14

120



QC

Quality Control

QC10- Inspect visual per QSI004- ground welds

0.00

Memo

0.00

S 10/06/15

130



QC

Quality Control

QC5- Inspect part completeness to step on W/O

0.00

Memo

0.00

S 10/06/15

(40)

W/O:		WORK ORDER CHANGES					
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Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

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Run

Start



Stop

Sequence ID/
Work Center IDOperation
DescriptionSet Up/
Run Hours

Tool ID

Tool # Plan
CodeAccept
QtyReject
QtyReject
NumberInsp.
Stamp

140

Chemical Conversion Coat per QSI005 4.1

0.00



HandFinish

Memo

0.00

Hand Finishing

10-6-15

150

QC3- Inspect Part Finish

0.00



QC

Memo

0.00

Quality Control

1 4/6/15

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Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____
QC: _____ Date: _____ SPC (Y/N): _____ Date: _____

Run

Start



Stop



Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
160 Skidtubes	Skidtubes	0.00							
Skidtubes	<p>Memo</p> <p>1-Open up holes of Detail C and ground handling to 0.625" (total of 8 holes per side) as per dwg D2750.</p> <p>2-Open up holes of Detail B to 0.750" (total of 4 holes per side) as per dwg D2750.</p> <p>3- Open float hole to 0.500" (4 per side)</p> <p>4-Chamfer holes of Detail B, C, ground handling and float holes per dwg D2750 (welding instructions on sheet 8)</p> <p>5-Deburr and blow out all chips from inside of tube</p> <p>6- Prepare tube for welding, remove alodine as required.</p> <p>7-Bond web D2739 in place as per QSI 015 A/R <input type="checkbox"/><input type="checkbox"/><input type="checkbox"/> Sikaflex-291 batch: <u>M113519</u> exp. date: <u>10/11/30</u></p> <p>8- Weld spacers D3490-1, D3490-3 and D2743 as per dwg D2750 & QSI004 (welding instructions on sheet 8) A/R <input type="checkbox"/><input type="checkbox"/><input type="checkbox"/> Aluminum Rod batch: <u>M114242</u></p> <p>9- At section AJ-AJ drill out x-bolt spacer to 0.404"</p> <p>10-Grind welds flush as per Dwg D2750</p>	0.00							

M 10/6/17

BE 10/06/17
BE 10/06/17

10-6-15

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Cust Item ID:

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Customer:

Reference:

Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____
QC: _____ Date: _____ SPC (Y/N): _____ Date: _____

Run

Start



Stop



Sequence ID/
Work Center ID

Operation
Description

Set Up/
Run Hours

Tool ID

Tool #

Plan
Code

Accept
Qty

Reject
Qty

Reject
Number

Insp.
Stamp

11-Spot face ground handling holes section (total of 4 places per side) as per
dwg D2750

12-Debur holes

170



QC

Quality Control

QC10- Inspect visual per QSI004- ground welds

0.00

Memo

0.00

Handwritten: 8/20/06/21

Handwritten: M 12/6/17

180



QC

Quality Control

QC5- Inspect part completeness to step on W/O

0.00

Memo

0.00

Handwritten: 8/10/06/21

Handwritten: 10

W/O:		WORK ORDER CHANGES						
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Setup

Start



Revision ID:

Stop



Item Name: Skidtube LH

Start Date: 6/2/2010 Start Qty: 1.00



Cust Item ID:

Required Date: 6/9/2010 Req'd Qty: 1.00



Customer:

Reference:

Run

Start



Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____

Stop



QC: _____ Date: _____ SPC (Y/N): _____ Date: _____

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
190 	Pressure Wash per QSI005 4.3	0.00				1	0		
HandFinish	Memo	0.00							
Hand Finishing	Re-alodine tube as per QSI 005 section 4.1.2.1 do not acid etch.								
200 	White Gloss(Ref:4.3.5.1) per QSI005 4.3-Alum	0.00							
Powdercoat	Memo	0.00							
Powder Coating	START TIME: 10:00 OVEN TEMPERATURE: 320° FINISH TIME: 10:30								
210 	QC3- Inspect Part Finish	0.00				1	0		
QC	Memo	0.00							
Quality Control	Inspect for foreign object per QSI 024								

JH 10/06/28

1 BH 10-6-29

JH 10/06/30

W/O:		WORK ORDER CHANGES					
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Required Date: 6/9/2010 Req'd Qty: 1.00

Reference:

Cust Item ID:

Customer:

Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____
QC: _____ Date: _____ SPC (Y/N): _____ Date: _____

Setup

Start

Stop

Run

Start

Stop

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
220	HandFinishing	0.00							
	HandFinish								
	Hand Finishing								
	Memo	0.00							
	1- Install inserts as per Dwg D2750								
230	HandFinishing	0.00							
	HandFinish								
	Hand Finishing								
	Memo	0.00							
	1-Inspect for Foreign Objects								
	2-Spray inside of tube with "LPS-3" batch: N/A								
	3-Install blade fitting D3488-041, wearshoes and ground handling hardware as per dwg D2750 SIKA FLEX 241 BATCH: 111113519 EXP DATE: 10/11								
	4-assemble o-ring to plug as per dwg D3492 and apply o-ring lube A/R 55-o-ring lube batch: 111114189								
	5-Coat all exposed fasteners with "LPS Procyon" batch: M104251								

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Reference:

Accept



Setup

Start



Stop



Cust Item ID:

Customer:

Approvals:

Process Plan:

Date:

Tooling:

Date:

QC:

Date:

SPC (Y/N):

Date:

Run

Start



Stop



Sequence ID/
Work Center ID

Operation
Description

Set Up/
Run Hours

Tool ID

Tool #

Plan
Code

Accept
Qty

Reject
Qty

Reject
Number

Insp.
Stamp

240



QC

Quality Control

QC5- Inspect part completeness to step on W/O

Memo

0.00

0.00

8 10/6/30

②

250



Packaging

Packaging

Pick Kit

Memo

0.00

0.00

10-6-30 SP

260



QC

Quality Control

QC4- 100% Inspect kits for completeness

Memo

*****ensure antiseize is on AN8C21A bolts*****

0.00

0.00

8 10/07/12

8 10/07/12

②

W/O:		WORK ORDER CHANGES					
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Cust Item ID:

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Customer:

Reference:

Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____
QC: _____ Date: _____ SPC (Y/N): _____ Date: _____

Run

Start



Stop



Sequence ID/
Work Center ID

Operation
Description

Set Up/
Run Hours

Tool ID

Tool #

Plan
Code

Accept
Qty

Reject
Qty

Reject
Number

Insp.
Stamp

270



Packaging

Packaging

Memo

Package as per PPP D350-636-011

0.00

0.00

Rev H

10-7-12

280



QC

Quality Control

QC21- Final Inspection - Work Order Release

Memo

0.00

0.00

10-7-13

10-7-12

(1)

W/O:		WORK ORDER CHANGES					
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Picklist Print

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Page 1

Work Order ID: 59366

Parent Item: D350-636-011

Parent Item Name: Skidtube LH

Comments: IPP Rev: I 02.09.25 Rearranged procedure steps KJ
 IPP Rev: J 06-03-23 As per Rev D JLM
 IPP Rev: K 06-07.13 As per dsi9343 EC
 IPP Rev: L 07-07-28 Added SS Wearplates (Rev E) JLM Verified By: EC

Start Date: 6/2/2010

Start Qty: 1.00

Required Date: 6/9/2010

Required Qty: 1.00

D2594-3



Manufactured No

230

Each

231.0000

8

8

O-Ring, 205 Skidtube

Location

FP

55546

58191

Loc Qty

231

19

212

Loc Code

1359358

18 10/06/30

D2744



Manufactured No

110

Each

13.0000

1

1

Cap

Location

LG

51922

Loc Qty

13

13

Loc Code

13.0000

1

1

D2600-3-BENT



Manufactured No

110

Each

13.0000

1

1

Extrusion Bent

Location

LG

58903

Loc Qty

13

13

Loc Code

57.0000

8

8

D2743



Manufactured No

160

Each

57.0000

8

8

Crossbolt Spacer

Location

LG

50281

52310

57953

Loc Qty

57

10

24

23

Loc Code

2 59111

2 8

2 10/06/17

W/O:		WORK ORDER CHANGES					
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 IPP Rev: L 07-07-28 Added SS Wearplates (Rev E) JLM Verified By: EC

Start Date: 6/2/2010

Required Date: 6/9/2010

Start Qty: 1.00

Required Qty: 1.00

D2739



350 I Beam

Manufactured No

160

Each

7.0000

1

1

Location

LG

57948

58213

58904

Loc Qty

7

1

1

5

Loc Code

B 59 406 D 11/16/15

D3490-3



Cross Bolt Spacer

Manufactured No

160

Each

66.0000

4

4

Location

LG

57918

59229

Loc Qty

66

6

60

Loc Code

D3490-1



Cross Bolt Spacer

Manufactured No

160

Each

56.0000

4

4

Location

LG

59228

Loc Qty

56

56

Loc Code

ALS4-1032-225



Insert

Purchased

No

220

Each

7,062.000

38

38

Location

PK011

110768

Loc Qty

7062

7062

Loc Code

X 38 10/06/30

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Shop Packet Print

Page 2

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Start Date: 6/2/2010

Required Date: 6/9/2010

Start Qty: 1.00

Required Qty: 1.00

D3492-041



Plug Assembly

Manufactured No

230

Each

94.0000

8

8

Location

FP013

57915

58180

59189

Loc Qty

94

30

60

4

Loc Code

1359114

X 8 M 10/06/30

D3793-3



Wearshoe

Manufactured No

230

Each

27.0000

1

1

Location

FP18

59152

FP19

57947

Loc Qty

16

16

11

11

Loc Code

X 1 M 10/06/30

AN8C35A



BOLT

Purchased No

230

Each

56.0000

1

1

Location

FP

110847

ST346

114442

Loc Qty

6

6

50

50

Loc Code

X 1 M 10/06/30

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Shop Packet Print

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 IPP Rev: L 07-07-28 Added SS Wearplates (Rev E) JLM Verified By: EC

Start Date: 6/2/2010

Required Date: 6/9/2010

Start Qty: 1.00

Required Qty: 1.00

D3793-1



Wearshoe

Manufactured No

230

Each

10.0000

1

1

Location

FP18

56300

57945

Loc Qty

10

1

9

Loc Code

B59151

x1 10/06/30

D3488-041



Blade Fitting Assembly, LH

Manufactured No

230

Each

29.0000

1

1

Location

FP

53915

FP007

56052

Loc Qty

19

19

10

10

Loc Code

14.0000

x1 10/06/30

D3794-3



Gasket

Manufactured No

230

Each

Location

FP18

56066

Loc Qty

14

14

Loc Code

B59153

x1 10/06/30

Wednesday, June 02, 2010 1:18:19 PM

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Page 4

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

Picklist Print

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Page 5

Work Order ID: 59366

Parent Item: D350-636-011

Parent Item Name: Skidtube LH

Comments: IPP Rev: I ☐ 02.09.25 ☐ Rearranged procedure steps ☐ KJ ☐
 IPP Rev: J 06-03-23 As per Rev D JLM
 IPP Rev: K 06-07.13 As per dsi9343 EC
 IPP Rev: L 07-07-28 Added SS Wearplates (Rev E) JLM Verified By: EC

Start Date: 6/2/2010

Start Qty: 1.00

Required Date: 6/9/2010

Required Qty: 1.00

AN6C44A

Purchased No

230 Each

151.0000

4 4



BOLT

Location	Loc Qty	Loc Code
FG	2	
103964	2	
ST344	149	
111649	2	
114455	47	
114653	50	
114784	50	

MS21083C8

Purchased No

230 Each

41.0000

1 1



NUT

Location	Loc Qty	Loc Code
ST303	41	
113845	11	
114523	30	

D3536-25

Manufactured No

230 Each

32.0000

1 1



Gasket

Location	Loc Qty	Loc Code
FP12	32	
57944	6	
58820	26	

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Page 5

x4 10/06/30

x1 10/06/30

x1 10/06/30

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

Picklist Print

Wednesday, June 02, 2010 1:18:19 PM

Page 6 / 11

Work Order ID: 59366

Parent Item: D350-636-011

Parent Item Name: Skidtube LH

Comments: IPP Rev: I 02.09.25 Rearranged procedure steps KJ
 IPP Rev: J 06-03-23 As per Rev D JLM
 IPP Rev: K 06-07.13 As per dsi9343 EC
 IPP Rev: L 07-07-28 Added SS Wearplates (Rev E) JLM Verified By: EC

Start Date: 6/2/2010

Required Date: 6/9/2010

Start Qty: 1.00

Required Qty: 1.00

D3631-1



Manufactured No

230

Each

206.0000

8

8

Washer

Location

Loc Qty

Loc Code

ST076

206

206

1354388

x8 M 10/06/30

D3791-1



Manufactured No

230

Each

5.0000

1

1

Wearplate

Location

Loc Qty

Loc Code

FP17

5

5

1358906

x1 M 10/06/30

AN960C10L

NAS1149C0332

Purchased

No

230

Each

0.0000

38

38



washer

D2745



Manufactured No

230

Each

146.0000

8

8

Bushing

WAS
 * 8 left
 NOT "S"
 =

Location

Loc Qty

Loc Code

ST023

146

69

77

52311

57914

x8 M 10/06/30

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Page 6

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

Picklist Print

Wednesday, June 02, 2010 1:18:19 PM

Page 7

Work Order ID: 59366

Parent Item: D350-636-011

Parent Item Name: Skidtube LH

Comments: IPP Rev: I 02.09.25 Rearranged procedure steps KJ
 IPP Rev: J 06-03-23 As per Rev D JLM
 IPP Rev: K 06-07-13 As per dsi9343 EC
 IPP Rev: L 07-07-28 Added SS Wearplates (Rev E) JLM Verified By: EC

Start Date: 6/2/2010

Start Qty: 1.00

Required Date: 6/9/2010

Required Qty: 1.00

AN3C5A



Bolt

Purchased No 230 Each 923.0000 34 34

Location	Loc Qty	Loc Code
ST350	825	
114330	125	
114523	200	
114808	500	
ST351	98	
113121	10	
114108	45	
114181	43	

X34 M 10/06/30

D3537-1



Wearpad

Manufactured No 230 Each 11.0000 3 3

Location	Loc Qty	Loc Code
FP	1	
55465	1	B59116
FP17	10	
57713	10	

X3 M 10/06/30

AN960C816L



WASHER

Purchased No 230 Each 106.0000 1 1

Location	Loc Qty	Loc Code
ST348	106	
110584	100	
111424	6	

X1 M 10/06/20

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Page 7

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

Picklist Print

Page 8

Wednesday, June 02, 2010 1:18:19 PM

Work Order ID: 59366

Parent Item: D350-636-011

Parent Item Name: Skidtube LH

Comments: IPP Rev: I 02.09.25 Rearranged procedure steps KJ
 IPP Rev: J 06-03-23 As per Rev D JLM
 IPP Rev: K 06-07.13 As per dsi9343 EC
 IPP Rev: L 07-07-28 Added SS Wearplates (Rev E) JLM Verified By: EC

Start Date: 6/2/2010

Start Qty: 1.00

Required Date: 6/9/2010

Required Qty: 1.00

D3492-043 Manufactured No 230 Each 57.0000 8 8



Plug Assembly

Location	Loc Qty	Loc Code
FP	2	
54682	2	B 59121
FP013	55	
57916	51	
59190	4	

AN3C6A Purchased No 230 Each 565.0000 4 4



BOLT

Location	Loc Qty	Loc Code
ST351	565	
111982	565	

NAS1611-013 Purchased No 230 Each 219.0000 8 8



O-RING

Location	Loc Qty	Loc Code
FP	219	
114451	181	
114496	38	

D3535-25 Manufactured No 230 Each 13.0000 1 1



Wearshoe

Location	Loc Qty	Loc Code
FP18	13	B 59130
57943	13	

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Page 8

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

Picklist Print

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Page 9

Work Order ID: 59366

Parent Item: D350-636-011

Parent Item Name: Skidtube LH

Comments: IPP Rev: 1 02.09.25 Rearranged procedure steps KJ
 IPP Rev: J 06-03-23 As per Rev D JLM
 IPP Rev: K 06-07.13 As per dsi9343 EC
 IPP Rev: L 07-07-28 Added SS Wearplates (Rev E) JLM Verified By: EC

Start Date: 6/2/2010

Required Date: 6/9/2010

Start Qty: 1.00

Required Qty: 1.00

D3794-1



Manufactured No

230

Each

32.0000

1

1

Gasket

Location

Loc Qty

Loc Code

FP010

26

B59427

57942

26

FP014

6

57537

6

MS21043-6



Purchased

No

230

Each

826.0000

4

4

NUT

Location

Loc Qty

Loc Code

ST301

826

X4 20

10/06/30

112314

826

Manufactured

No

260

Each

33.0000

2

2

D3493-1



Washer

Location

Loc Qty

Loc Code

ST065

33

57825

33

Purchased

No

260

Each

41.0000

1

2

MS21083C8



NUT

Location

Loc Qty

Loc Code

ST303

41

113845

11

114523

30

M114934

10-6-30 SP

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Page 9

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

Picklist Print

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Page 10

Work Order ID: 59366

Parent Item: D350-636-011

Parent Item Name: Skidtube LH

Comments: IPP Rev: ☐ 02.09.25 ☐ Rearranged procedure steps ☐ KJ ☐
 IPP Rev: J 06-03-23 As per Rev D JLM
 IPP Rev: K 06-07.13 As per dsi9343 EC
 IPP Rev: L 07-07-28 Added SS Wearplates (Rev E) JLM Verified By: EC

Start Date: 6/2/2010

Required Date: 6/9/2010

Start Qty: 1.00

Required Qty: 1.00

AN8C21A



BOLT

Purchased No

260

Each

111.0000

2

2

10-6-30 SP

Location

Loc Qty

Loc Code

ST345

111

111605

21

113558

50

114653

40

AN960C816L



WASHER

Purchased No

260

Each

106.0000

1

2

10-6-30 SP

Location

Loc Qty

Loc Code

ST348

106

110584

100

111424

6

D3672-1



Phenolic Washer

Manufactured No

230

Each

1,367.000

4

4

Location

Loc Qty

Loc Code

ST077

1367

51674

367

52505

1000

D2741



Blade, 350 Skidtube

Manufactured No

260

Each

27.0000

1

1

10-6-30 SP

Location

Loc Qty

Loc Code

ST466

27

55905

27

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Page 10

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

Picklist Print

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Work Order ID: 59366

Page 11

Parent Item: D350-636-011

Parent Item Name: Skidtube LH

Comments:

IPP Rev: I 02.09.25 Rearranged procedure steps KJ
 IPP Rev: J 06-03-23 As per Rev D JLM
 IPP Rev: K 06-07.13 As per dsi9343 EC
 IPP Rev: L 07-07-28 Added SS Wearplates (Rev E) JLM Verified By: EC

Start Date: 6/2/2010

Required Date: 6/9/2010

Start Qty: 1.00

Required Qty: 1.00

D3532-1



Spacer

Manufactured No

260

Each

25.0000

2

2

Location

ST068

52321

Loc Qty

25

25

Loc Code

260

Each

894.0000

2

2

D3672-13



Phenolic Washer

Purchased

No

Location

ST077

54363

Loc Qty

894

894

Loc Code

2

Wednesday, June 02, 2010 1:18:19 PM

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Page 11

Handwritten notes and signatures:
 B 59426 10-7-92
 10-6-30 SP
 10-6-30 SP
 2

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

QTY -041	QTY -042	QTY -043	QTY -044	PART NUMBER	DESCRIPTION
X				D2750-041	350 SKIDTUBE ASSEMBLY, LH
	X			D2750-042	350 SKIDTUBE ASSEMBLY, RH
		X		D2750-043	350 SKIDTUBE ASSEMBLY, LH
			X	D2750-044	350 SKIDTUBE ASSEMBLY, RH
1	1	1	1	D2739	WEB
8	8	8	8	D2743	SPACER
1	1	1	1	D2744	CAP
8	8	8	8	D2745	BUSHING
1				D2750-1	SKIDTUBE WELDMENT, LH
	1			D2750-2	SKIDTUBE WELDMENT, RH
		1		D2750-3	SKIDTUBE WELDMENT, LH
			1	D2750-4	SKIDTUBE WELDMENT, RH
1		1		D3488-041	BLADE FITTING, LH
	1		1	D3488-042	BLADE FITTING, RH
4	4	4	4	D3490-1	SPACER
4	4			D3490-3	SPACER
		4	4	D3490-5	SPACER
8	8	8	8	D3492-041	PLUG ASSEMBLY
8	8			D3492-043	PLUG ASSEMBLY
		8	8	D3492-045	PLUG ASSEMBLY
1	1	1	1	D3535-25	WEARSHOE
1	1	1	1	D3536-25	GASKET
3	3	3	3	D3537-1	WEARPAD
8	8	8	8	D3631-1	WASHER
1	1	1	1	D3791-1	WEARPLATE
1	1	1	1	D3793-1	WEARSHOE
1	1	1	1	D3793-3	WEARSHOE
1	1	1	1	D3794-1	GASKET
1	1	1	1	D3794-3	GASKET
38	38	38	38	ALS4-1032-225	INSERT (OR ALS7-1032-225, AKS4-1032-225, AELS-1032-225)
34	34	34	34	AN3C5A	BOLT
4	4	4	4	AN3C6A	BOLT
4	4	4	4	AN6C44A	BOLT
1	1	1	1	AN8C35A	BOLT
38	38	38	38	AN960C10L	WASHER
1	1	1	1	AN960C816L	WASHER
4	4	4	4	MS21043-5	NUT
1	1	1	1	MS21083C8	NUT
4	4	4	4	NAS1515H3L	WASHER

GENERAL NOTES:

- MATERIAL: MAKE D2750-1/-2/-3/-4 FROM D2600-3 EXTRUSION (INITIAL LENGTH = 120.0).
- FINISH:
ACID ETCH, ALONDE ASSEMBLY PER DART QSI 005 4.1 PRIOR TO INSTALLING D2739 WEB.
POWDER COAT WHITE (REF. 4.3.5.1) PER DART QSI 005 4.3
BLACK ANTI-SKID PAINT AS INDICATED TO 1.0 ABOVE SKIDTUBE CENTER-LINE PER DART 005 4.4 (OPTIONAL).
- TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
- UNITS: INCHES UNLESS OTHERWISE NOTED
- BREAK SHARP EDGES: N/A
- IDENTIFICATION: N/A
- WEIGHT: D2750-041/-042/-043/-044 = 26.5 LBS
- WELD PER DART QSI 004
- INSTALL ALS4-1032-225 INSERTS AFTER FINISH AS INDICATED. DRILL 'F' SIZE HOLES ($\phi 0.297$) FOR WEARSHOE INSERTS
- FINAL CONFIGURATION SHOULD HAVE THE FOLLOWING MINIMUM MECHANICAL PROPERTIES:
MINIMUM YIELD TENSILE STRENGTH = 35 KSI
MINIMUM ULTIMATE TENSILE STRENGTH = 38 KSI
- SPRAY INSIDE OF TUBE WITH A COAT OF LPS LABORATORIES "LPS-3" AFTER FINISH AND AFTER INSTALLATION OF INSERTS.
COAT ALL EXPOSED FASTENERS WITH LPS LABORATORIES "LPS PROCYON" AFTER FINAL ASSEMBLY, CLEAN EXCESS OFF
POWDER COATING WITH MEK DEGREASER.
- SPACER AND PLUG INSTALLED SAME AS SECTION AJ-AJ EXCEPT HORIZONTAL
- SPACER AND PLUG INSTALLED SAME AS SECTION AP-AP EXCEPT HORIZONTAL

SHOP COPY
RETURN TO
ENGINEERING
UNCONTROLLED COPY
SUBJECT TO AMENDMENT
WITHOUT NOTICE
WORK ORDER
NO. 59366
BS10-6-02

RELEASED

F	INCORPORATE DSI 9413; QTY (3) D3537-1 WAS QTY (5) (ZN C8-1); D3791-1/-3 REPLACES D3535-13/-35 (ZN C8-1); D3794-1/-3 REPLACES D3536-13/-35 (ZN B8-1); ADD D3791-1 (ZN C8-1); WEARSHOE HOLES UNDER FWD/AFT SADDLE REMOVED (8 PL). WEARSHOE HARDWARE QTY UPDATED (ZN B8-1); D3488-041/-042 HARDWARE UPDATED (ZN C1-8, 9, 10, 11); ADD NOTE 12 AND 13 (ZN AB-1); REASON: REF. NCR 08-043	PH	08.07.16
E	CHANGE TO STAINLESS STEEL WEARPLATES; ADD RUBBER GASKETS, CHANGE INSERTS; ADD D3631-1; REMOVE QTY (38) NAS1515H3L; REMOVE QTY (10) NAS1515H8L; REMOVE D2741, QTY (2) AN960C816; REMOVE QTY (2) MS21083C8	CB	07.05.17
D	ADD HOLES AND SPACERS FOR APICAL FLOATS; INCORPORATE DEO 9133/9157	PH	06.01.05
C	ADD D2750-3/D2750-4; INCORPORATE D2738 AND D2740	CP	98.11.18
B	CHANGE MS24694-S293 TO AN8-16A	CP	98.09.01
A	NEW ISSUE	DS	98.04.16
REV.	DESCRIPTION	BY	DATE
DESIGN	PA	DART AEROSPACE USA, INC. PORT HADLOCK, WA	
DRAWN	PA		
CHECKED	AS	DRAWING NO.	REV. F
MFG. APPR.	AS	D2750	SHEET 1 OF 11
APPROVED	AS	TITLE	SCALE
DE APPR.	AS	350 SKIDTUBE ASSEMBLY	NTS
DATE	08.07.16	COPYRIGHT © 1993 BY DART AEROSPACE USA, INC. THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL AND IS SUPPLIED ON THE EXPRESS CONDITION THAT IT IS NOT TO BE USED FOR ANY PURPOSE OR COMMUNICATED TO ANY OTHER PERSON WITHOUT WRITTEN PERMISSION FROM DART AEROSPACE USA, INC.	

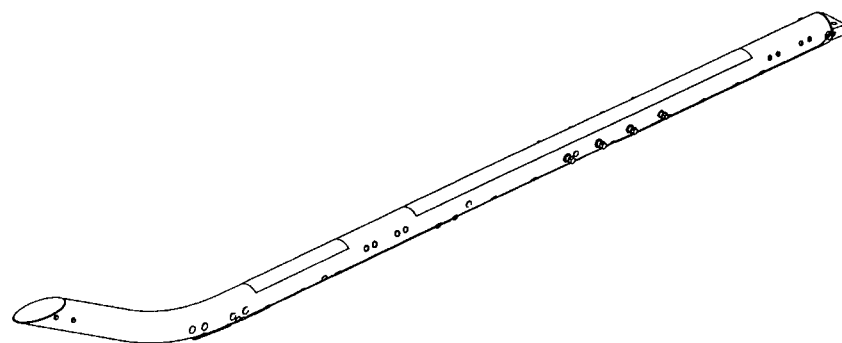
W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

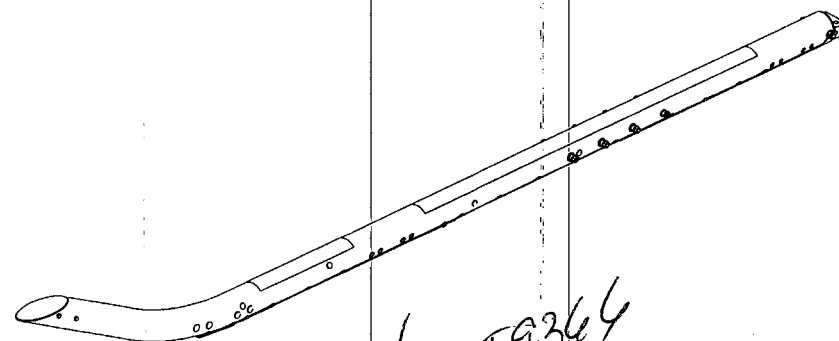
Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries



D2750-041 350 SKIDTUBE ASSEMBLY, LH



D2750-042 350 SKIDTUBE ASSEMBLY, RH

RELEASED
86-9-22-11

DESIGN	PC	DART AEROSPACE USA, INC.	
DRAWN	AM	PORT HADLOCK, WA	
CHECKED	A	DRAWING NO.	REV. F
MFG. APPR.	NA	D2750	SHEET 2 OF 11
APPROVED	ME	TITLE	SCALE
DE APPR.	ME	350 SKIDTUBE ASSEMBLY	NTS
DATE	08.07.16	<small>COPYRIGHT © 1998 BY DART AEROSPACE USA, INC.</small> <small>THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL AND IS SUPPLIED ON THE EXPRESS CONDITION THAT IT IS NOT TO BE USED FOR ANY PURPOSE OR COPIED OR COMMUNICATED TO ANY OTHER PERSON WITHOUT WRITTEN PERMISSION FROM DART AEROSPACE USA, INC.</small>	

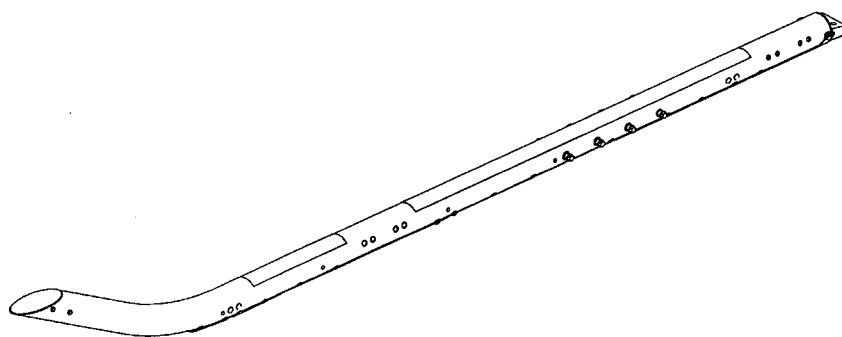
W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

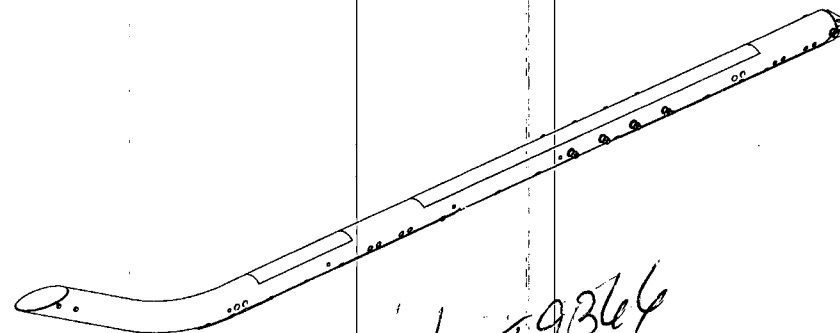
Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries



D2750-043 350 SKIDTUBE ASSEMBLY, LH



D2750-044 350 SKIDTUBE ASSEMBLY, RH

WLB 39366

RELEASED
68-09-22/17

DESIGN	FW	DART AEROSPACE USA, INC.	
DRAWN	FW	PORT HADLOCK, WA	
CHECKED	FW	DRAWING NO.	REV. F
MFG. APPR.	FW	D2750	SHEET 3 OF 11
APPROVED	FW	TITLE	SCALE
DE APPR.	FW	350 SKIDTUBE ASSEMBLY	NTS
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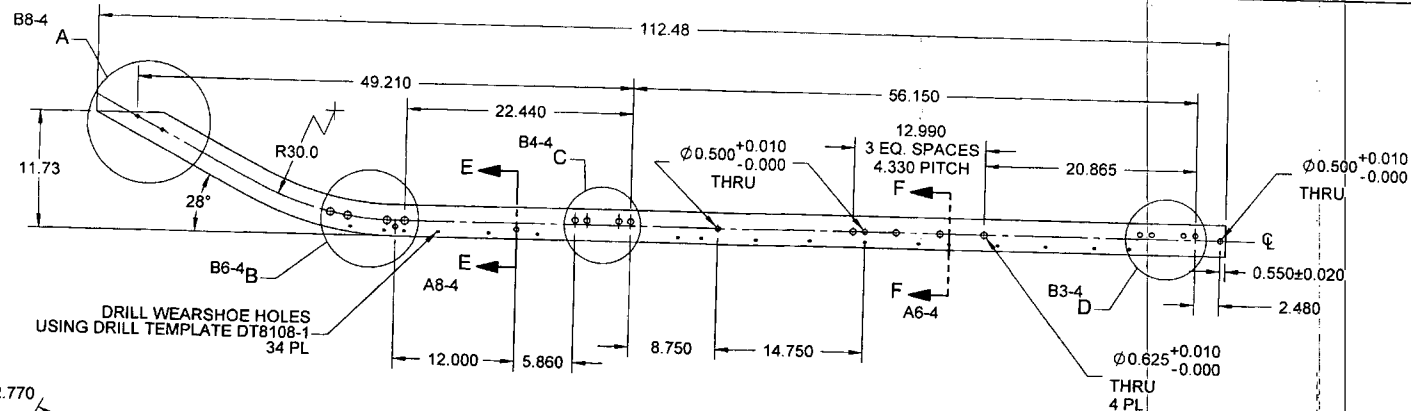
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DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

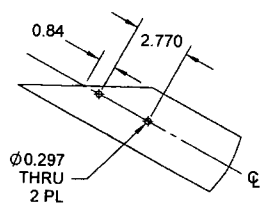
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DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

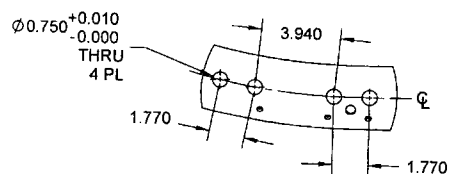
NOTE: Date & initial all entries



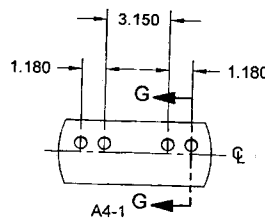
D2750-1 LH SKIDTUBE



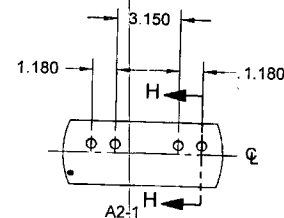
DETAIL A
SCALE 2X



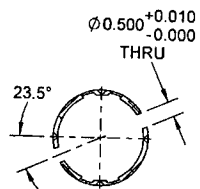
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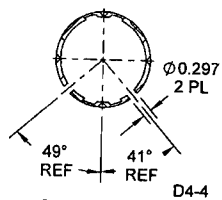
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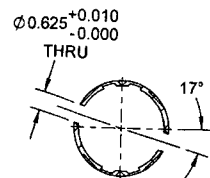
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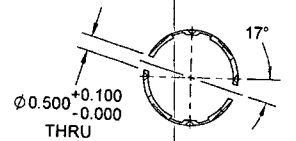
SECTION E-E
SCALE 3X, 2 PL



SECTION F-F
SCALE 3X, 17 PL





SECTION G-G
SCALE 3X, 4 PL



SECTION H-H
SCALE 3X, 4 PL

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DESIGN	PH	DART AEROSPACE USA, INC.	
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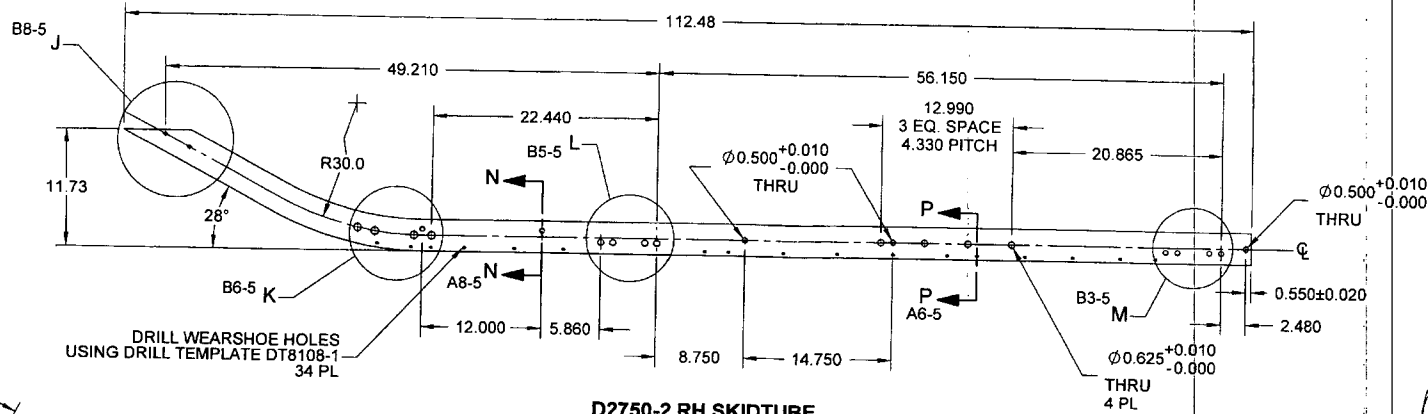
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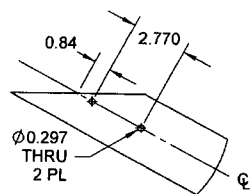
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			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

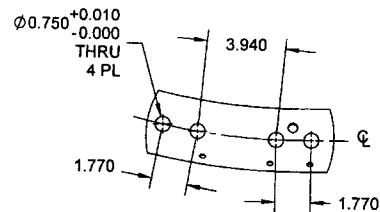
NOTE: Date & initial all entries



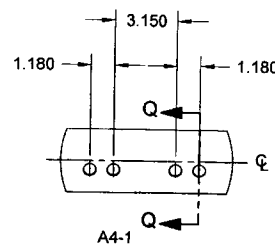
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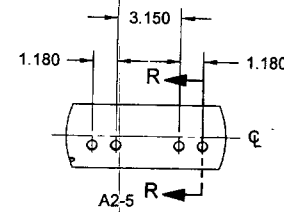
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SCALE 2X



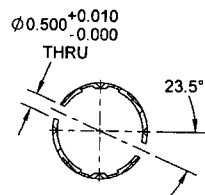
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SCALE 2X



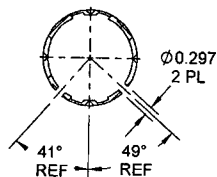
DETAIL L
SCALE 2X



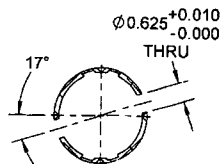
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SCALE 2X



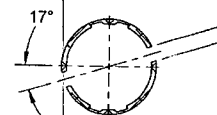
SECTION N-N
SCALE 3X, 2 PL



SECTION P-P
SCALE 3X, 17 PL



SECTION Q-Q
SCALE 3X, 4 PL



SECTION R-R
SCALE 3X, 4 PL

W/ 5236.4

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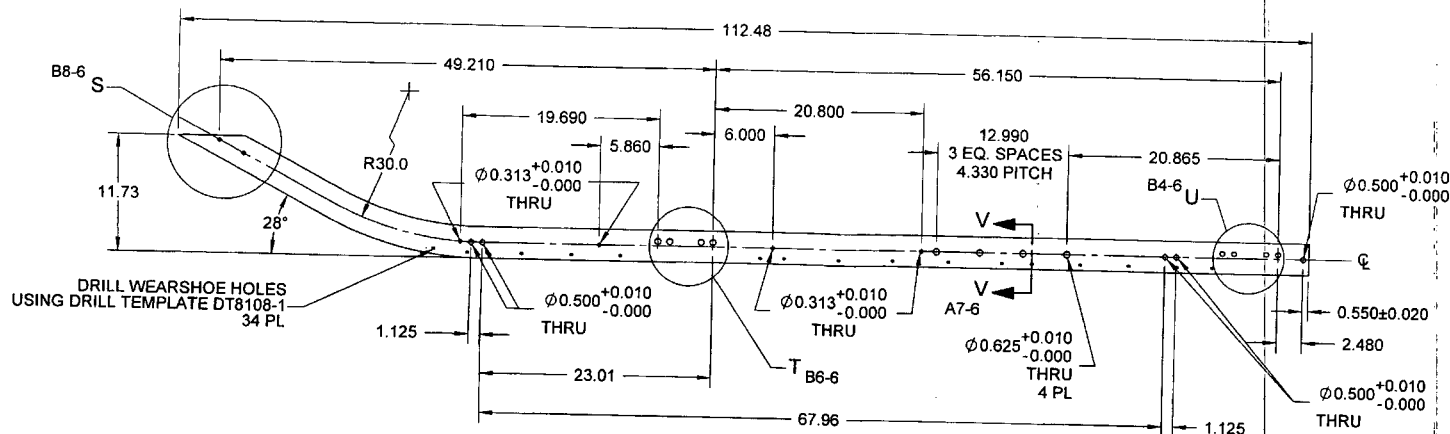
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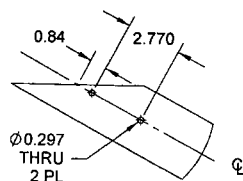
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NOTE: Date & initial all entries

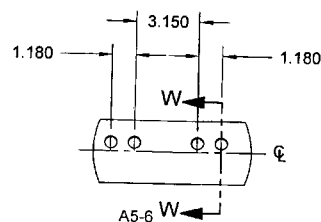
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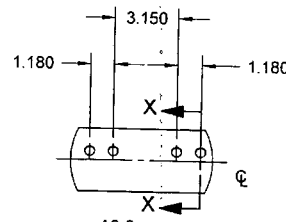
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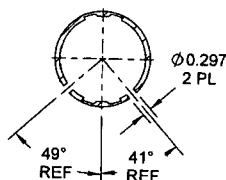
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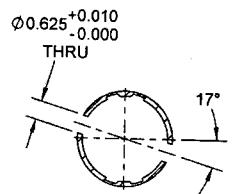
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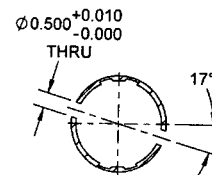
DETAIL U
SCALE 2X



SECTION V-V
SCALE 3X, 17 PL



SECTION W-W
SCALE 3X, 4 PL



SECTION X-X
SCALE 3X, 4 PL

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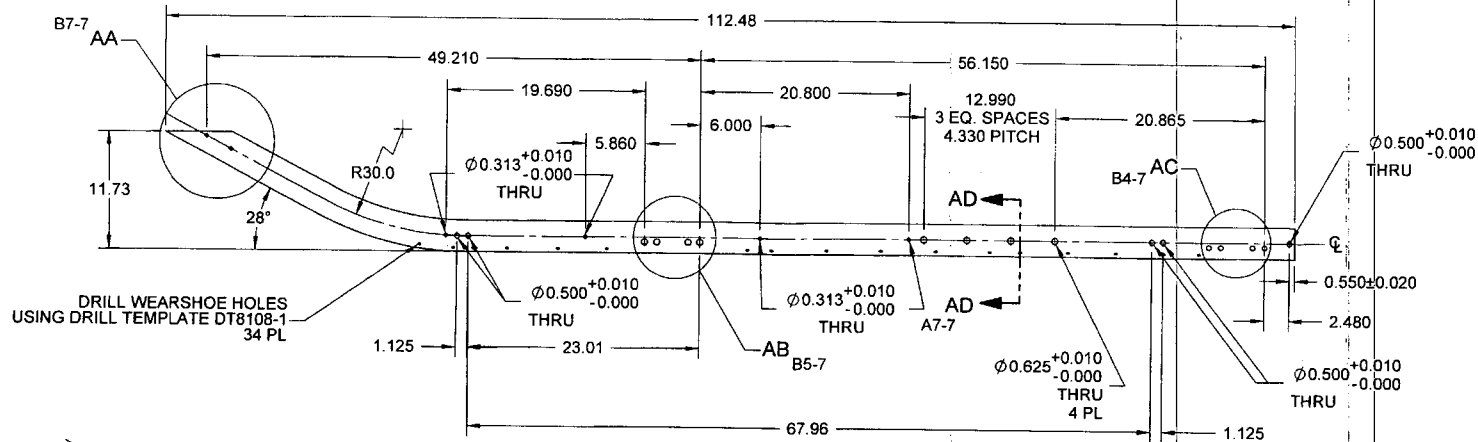
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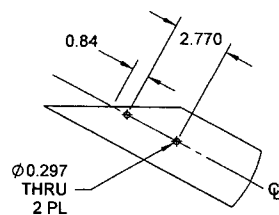
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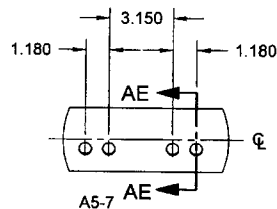
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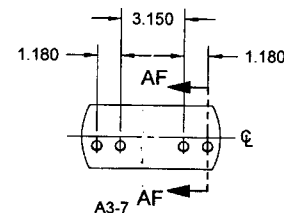
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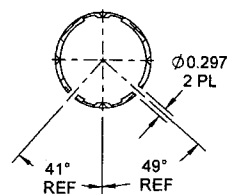
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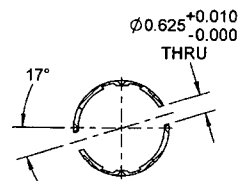
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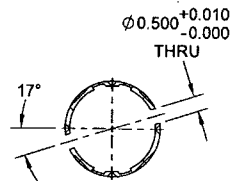
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SCALE 2X



SECTION AD-AD
SCALE 3X, 17 PL



SECTION AE-AE
SCALE 3X, 4 PL



SECTION AF-AF
SCALE 3X, 4 PL

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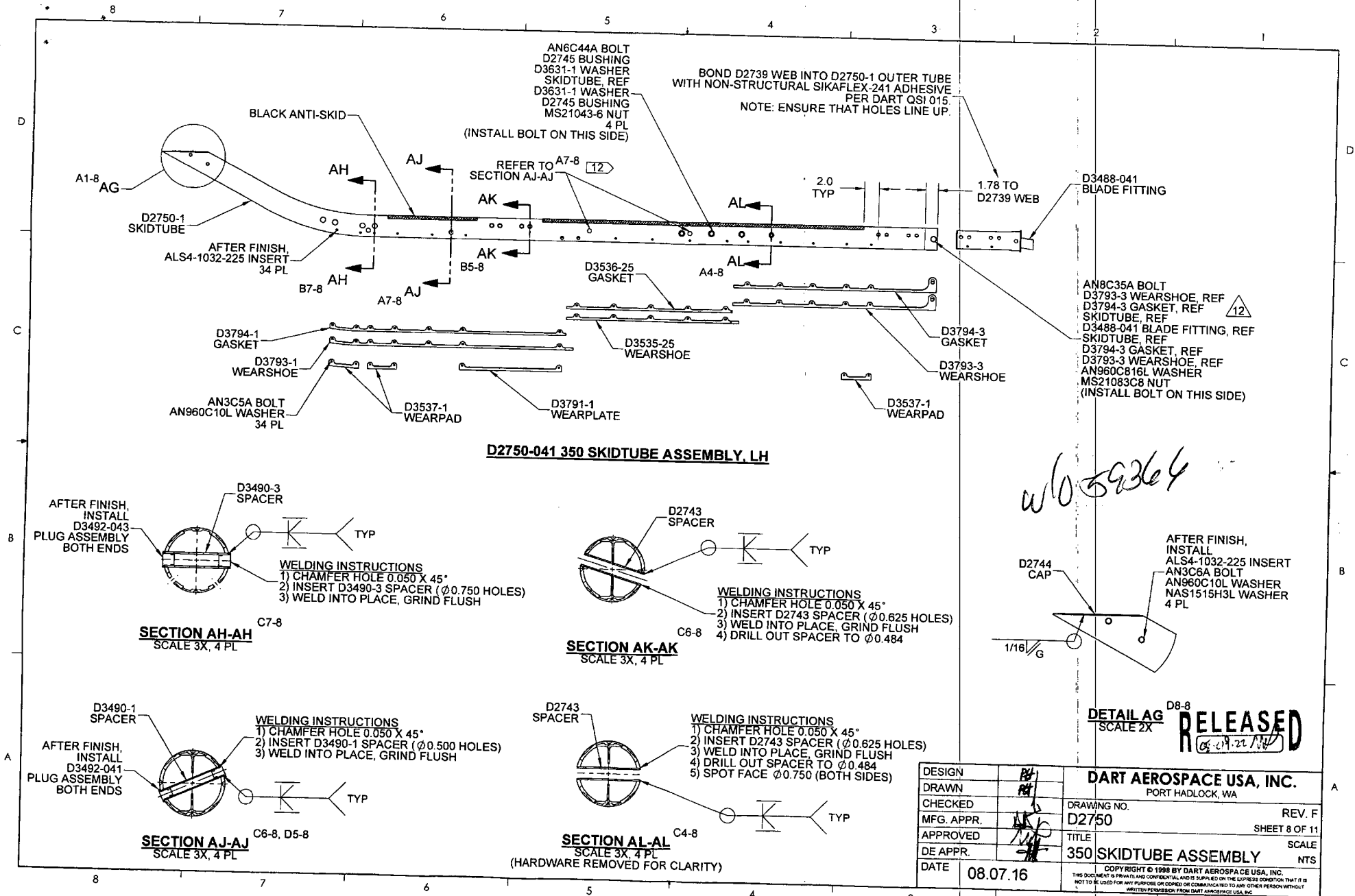
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NOTE: Date & initial all entries



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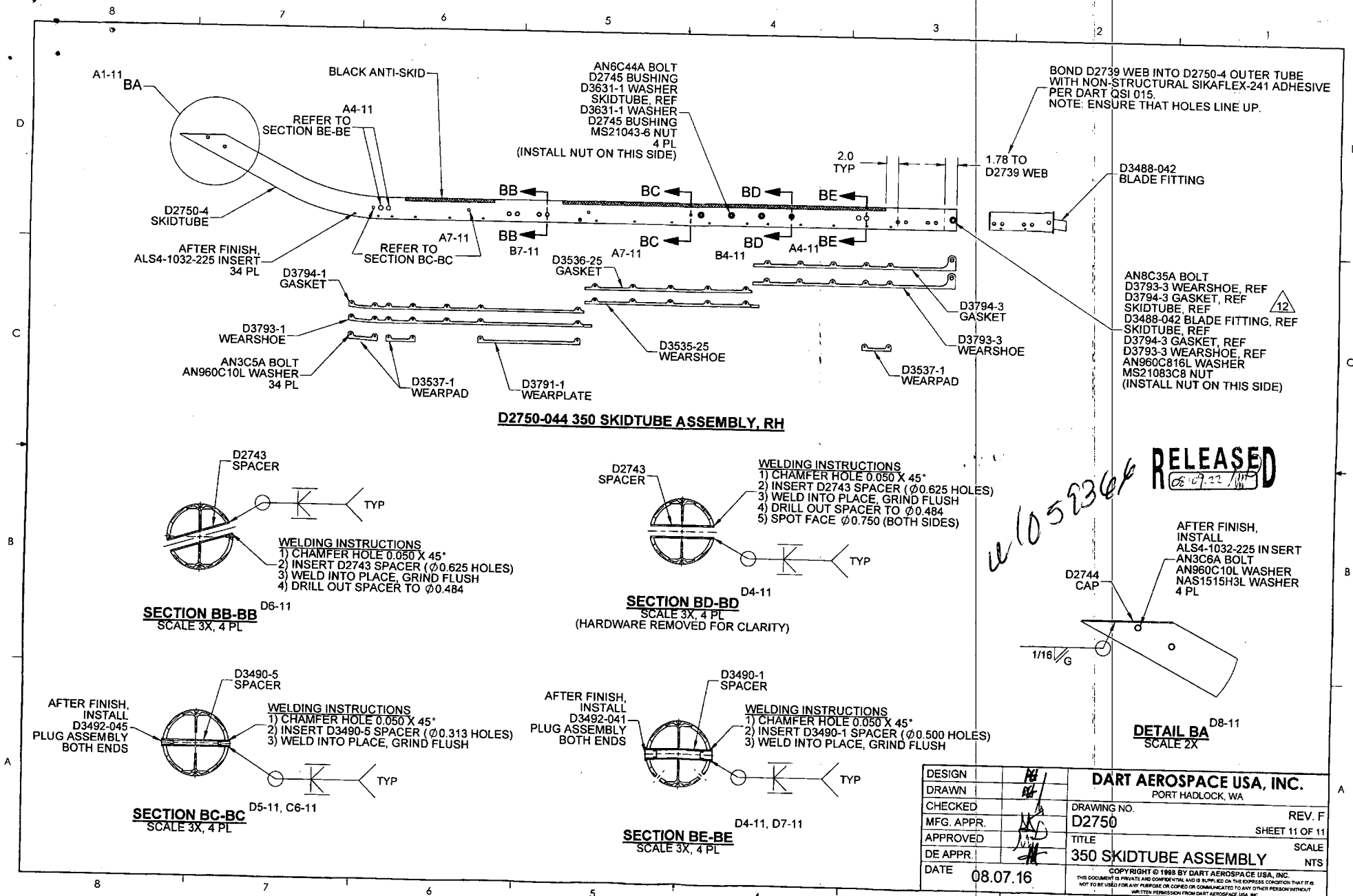
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			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries



RELEASED
06-09-22

105236

D2744
CAP

AFTER FINISH,
INSTALL
ALS4-1032-225 IN SERT
AN3C6A BOLT
AN960C10L WASHER
NAS1515H3L WASHER
4 PL

DETAIL BA^{D8-11}
SCALE 2X

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DRAWN	REV		SHEET 11 OF 11
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APPROVED	1		
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DATE 08.07.16			

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			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

NO. 233

AWS D17.1.2001
QUALIFICATION TEST RECORD

Name: Barclay Elliott
Job number: 58816
Part number: D350-626-014
Description: 350 skid tube
Welding Process: Tig[☒] Mig[]
Base material: Aluminium
Current: AC[☒] DC[]

TEST REQUIREMENTS AND RESULTS

Visual: pass[☒] fail[]
Penetration: pass[☒] fail[]

UNACCEPTABLE

Cracks: pass[☒] fail[]
Undercut: pass[☒] fail[]
Pin holes: pass[☒] fail[]
Overlap (cold lap): pass[☒] fail[]
Porosity (surface): pass[☒] fail[]
Coloration: pass[☒] fail[]

Qualifier Pat. Dunn Date of Test Coupon 100601

Welder Barclay Elliott Date of Test Coupon 10-06-01

The above named individual is qualified in accordance with AWS D17.1.2001 to weld

Work Order ID 59366

Wednesday, June 02, 2010 1:18:14 PM



Page 1

Item ID: D350-636-011

Accept



Setup Start



Revision ID:

Stop



Item Name: Skidtube LH

Start Date: 6/2/2010 Start Qty: 1.00



Cust Item ID:

Required Date: 6/9/2010 Req'd Qty: 1.00



Customer:

Reference:

Run Start



Approvals: Process Plan:

M

Date: 10-6-02

Tooling:

Date:

QC:

Date:

SPC (Y/N):

Date:

Stop



Sequence ID/
Work Center ID

Operation
Description

Set Up/
Run Hours

Tool ID

Tool #

Plan
Code

Accept
Qty

Reject
Qty

Reject
Number

Insp.
Stamp

Draw Nbr

Revision Nbr

D2750

Rev F

0

0.00



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